



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,534	04/25/2006	Stefan Schmitt-Walter	4100.P0421US	8443
23474	7590	03/12/2007	EXAMINER	
FLYNN THIEL BOUTELL & TANIS, P.C. 2026 RAMBLING ROAD KALAMAZOO, MI 49008-1631			KERNs, KEVIN P	
		ART UNIT		PAPER NUMBER
				1725
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	03/12/2007	PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/563,534	SCHMITT-WALTER, STEFAN	
	Examiner Kevin P. Kerns	<b>Art Unit</b> 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 22 December 2005 and 25 April 2006.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-18 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-18 is/are rejected.  
 7) Claim(s) 1-6, 10 and 13-17 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 22 December 2005 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>12/22/05, 4/25/06</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "1" ("welding tong drive 1" is only present in claim 1, but not in the specification). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said", should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In this instance, the legal terms "means" and "comprises" are present in the 1<sup>st</sup> and 2<sup>nd</sup> lines of the abstract, respectively.

3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

In this instance, the specification lacks section headings.

4. The disclosure is objected to because of the following informalities: on page 1, 3<sup>rd</sup> line from the end of the page, delete "This object is solved by the features of Patent Claim 1.", as claim numbering often changes during prosecution of patent applications. Appropriate correction is required.

### ***Claim Objections***

5. Claims 1-6, 10, and 13-17 are objected to because of the following informalities: Throughout claims 1, 3, 10, and 15-17, all instances of "and / or" should either be changed to "and/or" (no spaces), or appropriately changed to either "and" or "or" for clarity.

Throughout claims 2, 4-6, and 13, all references to steps (a)-(d) should be replaced by respective "approaching", "holding", "actuation", or "closure" steps, as it is possible that the number of steps in independent claim 1 would change during prosecution of the application.

In claim 1, 2<sup>nd</sup> line of step c), delete "the" before "contacting" to obtain proper antecedent basis.

In claim 1, 2<sup>nd</sup> line of step d), as well as claim 14, 3<sup>rd</sup> line, replace "(3)" with "(2)" after "primary drive device".

In claim 1, 2<sup>nd</sup> line of step d), delete "the" before "build-up" to obtain proper antecedent basis.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

In the present instance, claim 1 recites the broad recitation "welding tongs (4)", and the claim also recites "in particular of the welding tong limbs (5,6)" which is the narrower statement of the range/limitation.

Claim 13 recites the broad recitation "a few kN", and the claim also recites "in particular up to about 5 kN" which is the narrower statement of the range/limitation.

Claim 15 recites the broad recitation "an evaluation device (12)", and the claim also recites "in particular for quality assurance" which is the narrower statement of the range/limitation.

With regard to claims 1, 6, and 10, the term "certain" is indefinite, as "certain" would be capable of being any arbitrary (but unknown) point. It is suggested to replace "certain" with "predetermined" to more distinctly define this limitation in the claim.

With regard to claim 1 (step (d)), the term "appropriate" is indefinite, as "appropriate" could be any arbitrary (but unknown) value. It is suggested to replace "appropriate" with "predetermined" to more distinctly define this limitation in the claim.

Regarding claim 5, the phrase "for example" (in this instance "i.e.") renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

With regard to claim 5, the phrase "is acquired with its arithmetic sign" is indefinite, as it appears to be totally out of context with the claim (perhaps an error in translation?). Corrections and/or clarification are required.

Claims 7-10 recite the limitation "the contacting current value". There is insufficient antecedent basis for this limitation in the claims. In this instance, it is suggested to replace "value" with "level" to be consistent with claim 6.

Claim 8 recites the limitation "the respective used welding tongs". There is insufficient antecedent basis for this limitation in the claim. In this instance, it is suggested to delete "respective used".

The term "sufficiently high" in claim 8 is a relative term which renders the claim indefinite. The term "sufficiently high" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "briefly" in claim 9 is a relative term which renders the claim indefinite. The term "briefly" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 11 recites the limitation "the current". There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "the monitored current". There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites the limitations "the corresponding welding points" and "the open and/or closed-loop control device". There is insufficient antecedent basis for these limitations in the claim.

Claim 16 recites the limitation "the open and/or closed-loop control device ". There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 16, the phrase "or the like" (in this instance "or similar effects") renders the claim(s) indefinite because the claim(s) include(s) elements not actually

disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim 17 recites the limitations "the starting spatial points", "the bodily changes", "the change" and "the evaluation device". There is insufficient antecedent basis for these limitations in the claim.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-18 insofar as definite (in view of the 35 USC 112, 2<sup>nd</sup> paragraph rejections) are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al. (US 5,988,486).

Kobayashi et al. disclose a method of controlling electrode force of a spot welding gun G that includes open and closed-loop control of welding tongs by using a welding tong drive having primary and secondary drive devices (4,6), with the primary drive device 4 (electric servomotor) operable to move two welding tong limbs, or arms 9,10 (see the X-shaped spot welding gun of Figure 8, as disclosed on column 8, line 57 through column 9, line 18) having respective welding electrodes (3,5) moveable toward (and compressing with predetermined force on while acquiring wear/degradation, or bodily changes, to the electrodes 3,5) opposite sides of workpiece(s) W, and with the

secondary drive device 6 (electric servomotor) operable to vary spatial orientation (spatial points relative to the workpiece(s)) of the welding tongs (9,10) via a variably applied current while swivelling (pivoting) within a hemisphere in the X-shaped spot welding gun (Figure 8), in which the method includes the steps of providing a welding gun controller 7 and robot controller 8 (Figures 1 and 8) and associated evaluation device (see pressing control flowcharts in Figures 4 and 6) that are operable to move the welding tongs (9,10); providing approach of the welding tongs (9,10) to a predetermined spatial point relative to the workpiece(s) W; holding the welding tongs (9,10) in a fixed spatial position during the approach via an applied holding current (which would be experimentally predetermined and nearly constant); actuating the secondary drive device (servomotor 6) until contact of the workpiece(s) W with the welding tongs (9,10), such that movement of the welding tongs (9,10) would be enabled by providing an adequate contacting (monitored) current to overcome opposing friction forces via an initially high torque, thus acquiring a servo lag in the secondary drive device (servomotor 6); and closing (and subsequently opening after the welding process) the welding tongs (9,10) by the primary drive device (servomotor 4) with an adequate welding pressure (up to a few kN) to perform spot welding of the workpiece(s) W (abstract; column 1, lines 6-9; column 2, line 4 through column 4, line 47; column 5, line 19 through column 9, line 18; and Figures 1, 2, and 4-8).

10. Claims 1, 2, 13, 14, 16, and 18 insofar as definite (in view of the 35 USC 112, 2<sup>nd</sup> paragraph rejections) are rejected under 35 U.S.C. 102(b) as being anticipated by Obara et al. (US 5,091,623).

Obara et al. disclose a spot welding gun provided with a backup cylinder that includes open and closed-loop control of X-type welding tongs by using a welding tong drive having primary and secondary drive devices ((26,29) in Figure 2, and (46,49) in Figure 3, respectively), with the primary drive devices (29,49) (main cylinders) being operable to move two welding tong limbs, or arms (23,24) and (43,44) (see the X-shaped spot welding guns of Figures 2 and 3, which are disclosed in detail in column 2, line 54 through column 3, line 66) having respective welding electrodes (28,31) and (48,51) moveable toward (and compressing with predetermined force on while acquiring wear/degradation, or bodily changes, to the electrodes (28,31) and (48,51)) opposite sides of workpiece (32,52), and with the secondary drive device (26,46) (backup cylinders) operable to vary spatial orientation (spatial points relative to the workpiece (32,52)) of the welding tongs (23,24) and (43,44) while swivelling (pivoting) within a hemisphere in the X-shaped spot welding gun (Figures 2 and 3), in which the method includes the steps of providing a robot arm controller (21,41) (Figures 2 and 3) that is operable to move the welding tongs (23,24) and (43,44); providing approach of the welding tongs (23,24) and (43,44) to a predetermined spatial point relative to the workpiece (32,52); holding the welding tongs (23,24) and (43,44) in a fixed spatial position during the approach; actuating the secondary drive device (26,46) (backup cylinders) until contact of the workpiece (32,52) with the welding tongs (23,24) and

(43,44), such that movement of the welding tongs (23,24) and (43,44) would be enabled by providing an adequate contacting force to overcome opposing friction forces via an initially high torque; and closing (and subsequently opening after the welding process) the welding tongs (23,24) and (43,44) by the primary drive device (29,49) (main cylinders) with an adequate welding pressure (up to a few kN) to perform spot welding of the workpiece (32,52) (abstract; column 1, lines 7-9 and 50-68; column 2, line 18 through column 4, line 18; and Figures 1-3).

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5,528,011 is also cited in PTO-892.
  
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin P. Kerns *Kevin Kerns 3/7/07*  
Primary Examiner  
Art Unit 1725

KPK  
kpk  
March 7, 2007